

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (original): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a specification of the two-dimensional code including one or more of a code type, a model, an error correcting level, a printing pattern, a data type for encoding the two-dimensional code, a data volume, a printable space or printing precision of the two-dimensional code;

calculating the specification of the two-dimensional code including one or more of a cell size or a symbol size of the two-dimensional code in accordance with the designated condition;

designating an attachment condition of the image pick-up section including one or more of an attachment distance limitation of the image pick-up section, a shift tolerance of a two-dimensional code label, presence or absence of rotation, a cell size of the two-dimensional code or a printing pattern; and

calculating an attachment specification including one or more of the attachment distance of the image pick-up section, a focusing range, a size of a visual field, the number of pixels to be allocated to one cell, a total thickness of close-up rings, a combination of a thickness of each of the necessary close-up rings and the number thereof, or a standard of a scale of a focusing ring in accordance with the specification of the calculated two-dimensional code and the attachment condition of the image pick-up section.

Claim 2 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

designating a specification of the two-dimensional code including at least a volume of data to be encoded into the two-dimensional code and a printable space or a symbol size of the two-dimensional code; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of close-up rings in accordance with the specification of the calculated two-dimensional code.

Claim 3 (original): The method of setting a two-dimensional code reader according to claim 2, wherein cell size of the two-dimensional code is calculated as the specification of the two-dimensional code based on at least the volume of data to be encoded into the two-dimensional code and the printable space or the symbol size of the two-dimensional code and is determined based thereon.

Claim 4 (original): The method of setting a two-dimensional code reader according to claim 2, wherein the cell size of the two-dimensional code is calculated as the specification of the two-dimensional code based on a maximum value which can be permitted as at least the cell size and a resolution of a printer of the two-dimensional code and is determined based thereon.

Claim 5 (original): The method of setting a two-dimensional code reader according to claim 2, further comprising the steps of:

specifying an attachment condition of the image pick-up section including at least an attachment distance limitation of the image pick-up section; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of the close-up rings based on the specification of the two-dimensional code and the attachment condition of the image pick-up section.

Claim 6 (original): The method of setting a two-dimensional code reader according to

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

claim 2, further comprising the steps of:

specifying an attachment condition of the image pick-up section including any of at least a shift tolerance of a two-dimensional code label, presence or absence of rotation and a printing pattern; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of the close-up rings based on the specification of the two-dimensional code and the attachment condition of the image pick-up section.

Claim 7 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a specification of the two-dimensional code including at least a code type of the two-dimensional code, a volume of data to be encoded into the two-dimensional code, a cell size of the two-dimensional code and a printable space or a symbol size of the two-dimensional code; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of close-up rings in accordance with the specification of the ~~calculated~~ two-dimensional code.

Claim 8 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a specification of the two-dimensional code including at least any of a volume of data to be encoded into the two-dimensional code and a cell size of the two-dimensional code; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of close-up rings in accordance with the specification

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

of the ~~calculated~~ two-dimensional code.

Claim 9 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a specification of the two-dimensional code including at least any of a cell size of the two-dimensional code and a printable space or a symbol size of the two-dimensional code; and

calculating an attachment specification including at least an attachment distance of the image pick-up section and a total thickness of close-up rings in accordance with the specification of the ~~calculated~~ two-dimensional code.

Claim 10 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a two-dimensional code reading specification including at least any of a volume of data to be encoded into the two-dimensional code, a printable space or a symbol size of the two-dimensional code, and an attachment distance of the image pick-up section; and

calculating an attachment specification including at least a total thickness of close-up rings in accordance with the ~~calculated~~ two-dimensional code reading specification.

Claim 11 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a two-dimensional code reading specification including at least any of a volume of data to be encoded into the two-dimensional code, a cell size of the two-dimensional code, and an attachment distance of the image pick-up section; and

calculating an attachment specification including at least a total thickness of close-up rings in accordance with the ~~calculated~~ two-dimensional code reading specification.

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

Claim 12 (currently amended): A method of setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, comprising the steps of:

designating a two-dimensional code reading specification including at least any of a cell size of the two-dimensional code, and a printable space or a symbol size of the two-dimensional code; and

calculating an attachment specification including at least a total thickness of close-up rings in accordance with the ~~calculated~~ two-dimensional code reading specification.

Claim 13 (original): The method of setting a two-dimensional code reader according to claim 1, further comprising the step of:

displaying at least any of an attachment distance of the image pick-up section related to calculation, a total thickness of close-up rings or a combination of a thickness of each of necessary close-up rings and the number thereof, a standard of a scale of a focusing ring, a length and width of a symbol of the two-dimensional code, a size of one cell, a length and width of a two-dimensional code label having the two-dimensional code printed thereon, a shift tolerance of the two-dimensional code label, presence or absence of rotation, and a relationship between a visual field and a symbol size, in an image.

Claim 14 (original): The method of setting a two-dimensional code reader according to claim 1, wherein a candidate group of the total thickness of the close-up rings or the combination of the thickness of each of the necessary close-up rings and the number thereof is calculated, a focusing range is visually displayed for each of the candidates, any of the candidate groups displayed side by side is selected so that at least any of an attachment distance of the image pick-up section related to the selected candidate, a focusing range, a size of a visual field, the number of pixels to be allocated to one cell, the total thickness of the close-up rings, the combination of

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

the thickness of each of the necessary close-up rings and the number thereof, and a standard of a scale of a focusing ring is displayed.

Claim 15 (original): The method of setting a two-dimensional code reader according to claim 1, further comprising the step of:

setting an operation of the two-dimensional code reader including any of specification of a code to be read by the two-dimensional code reader, specification of a reading operation, output, predictive maintenance information and communication.

Claim 16 (original): A two-dimensional code read setting device for setting a two-dimensional code reading operation for reading a two-dimensional code by using an image pick-up section and decoding the two-dimensional code by using a two-dimensional code reader, comprising:

a two-dimensional code specification designating section for designating a specification of the two-dimensional code including any of a code type, a model, an error correcting level, a printing pattern, a data type for encoding the two-dimensional code, a data volume, a printable space and printing precision of the two-dimensional code read by the image pick-up section;

a two-dimensional code specification calculating section for calculating the specification of the two-dimensional code including any of a cell size and a symbol size of the two-dimensional code in accordance with the condition designated by the two-dimensional code specification designating section;

an image pick-up section attachment condition designating section for designating an attachment condition of the image pick-up section including any of an attachment distance limitation of the image pick-up section, a shift tolerance of a two-dimensional code label, presence or absence of rotation, a cell size of the two-dimensional code and a printing pattern;

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

and

an image pick-up section attachment specification calculating section for calculating an attachment specification including any of the attachment distance of the image pick-up section, a focusing range, a size of a visual field, the number of pixels to be allocated to one cell, a total thickness of close-up rings, a combination of a thickness of each of the necessary close-up rings and the number thereof, and a standard of a scale of a focusing ring in accordance with the specification of the two-dimensional code which is calculated by the two-dimensional code specification calculating section and the attachment condition of the image pick-up section which is designated by the image pick-up section attachment condition designating section.

Claim 17 (original): The two-dimensional code reader setting device according to claim 16, further comprising:

a two-dimensional code reading operation setting section for setting an operation of the two-dimensional code reader including any of specification of a code to be read by the two-dimensional code reader, specification of a reading operation, output, predictive maintenance information and communication.

Claim 18 (currently amended): A two-dimensional code reader setting program for setting a two-dimensional code reader for reading a two-dimensional code by using an image pick-up section, which causes a computer to implement functions of:

designating a specification of the two-dimensional code including any of a code type of the two-dimensional code, a model, an error correcting level, a printing pattern, a data type to be encoded into the two-dimensional code, a data volume, a printable space and printing precision;

calculating the specification of the two-dimensional code including any of a cell size and a symbol size of the two-dimensional code in accordance with the designated condition;

U.S. Patent Application No. 10/621,090
Amendment dated May 20, 2005
Reply to Office Action of April 5, 2005

designating an attachment condition of the image pick-up section including any of an attachment distance limitation of the image pick-up section, a shift tolerance of a two-dimensional code label, presence or absence of rotation, a cell size of the two-dimensional code and a printing pattern; and

calculating an attachment specification including any of the attachment distance of the image pick-up section, a focusing range, a size of a visual field, the number of pixels to be allocated to one cell, a total thickness of close-up rings, a combination of a thickness of each of the necessary close-up rings and the number thereof, and a standard of a scale of a focusing ring in accordance with the specification of the ~~calculated~~ two-dimensional code and the attachment condition of the image pick-up section.

Claim 19 (original): The two-dimensional code reader setting program according to claim 18, which further causes the computer to implement a function of:

saving an image of the two-dimensional code acquired by the image pick-up section.

Claim 20 (original): The two-dimensional code reader setting program according to claim 18, which further causes the computer to implement a function of:

printing set contents which are calculated.

Claim 21 (original): The two-dimensional code reader setting program according to claim 18, which further causes the computer to implement a function of:

saving the set contents which are calculated in a file.

Claim 22 (original): A computer readable recording medium recording the two-dimensional code reader setting program according to claim 18.